

CHARACTERISTICS

The **MTJZ** series contains Z-axis Linear Units with toothed belt drive , integrated Ball rail system and compact dimensions. This Linear Units provide high performance features such as, high speed, good accuracy and repeatability by vertical applications.

They can easily be combined to multi-axis systems.

Excellent price-/performance ratio and quick delivery time are ensured.

The compact, precision-extruded aluminum Profile from 6063 AL with integrated Zero-backlash Ball rail guide system, allows high load capacities and optimal cycles for the movement of larger masses at high speed.

In the linear units MTJZ is used a pre-tensioned steel reinforced AT polyurethane timing toothed belt. In conjunction with a Zero-backlash drive pulley high moments with alternating loads with good positioning accuracy, low wear and low noise can be realized.


The in the Profile slot driving Polyurethane timing belt protects all the parts in the Profile from dust and other contaminations

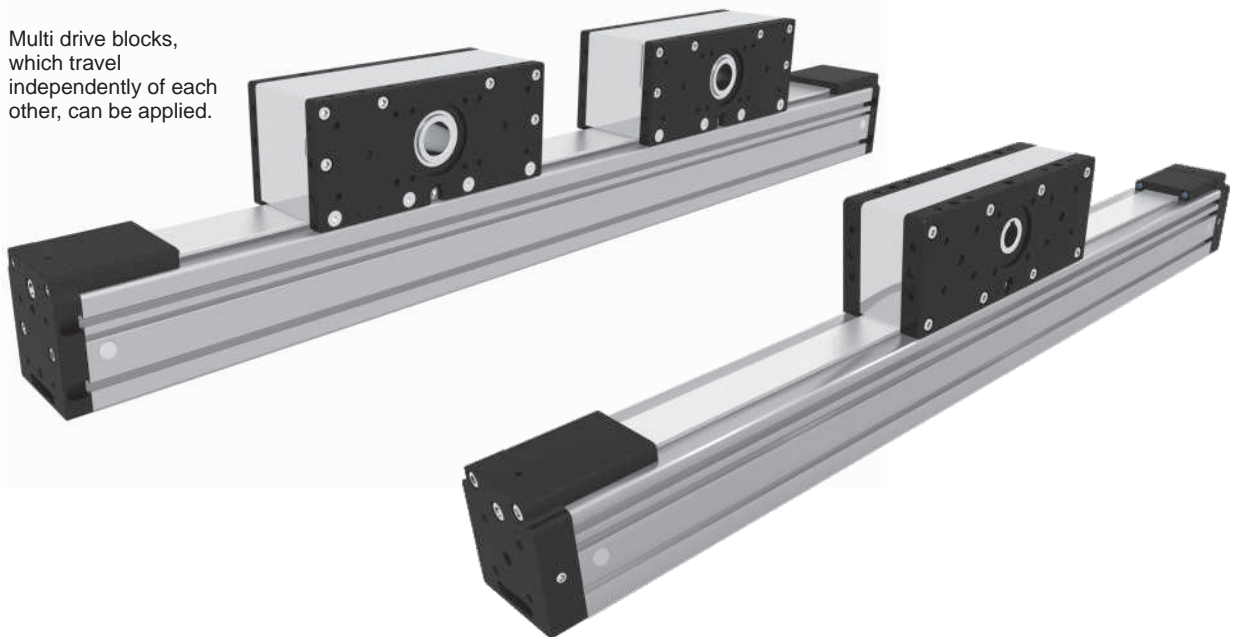
The aluminum Profile includes T-slots for attaching sensors and switches. Also, a Reed switch can be used here.


The drive block provides the possibility to attach a Motor or Gearbox housing and additional accessories on it.

Central lubrication port on the drive block allows easy re-lubrication of the Ball rail guide.

For the linear units MTJZ various adaptation options, for attaching (or redirecting), for Motors or Gearboxes are available.

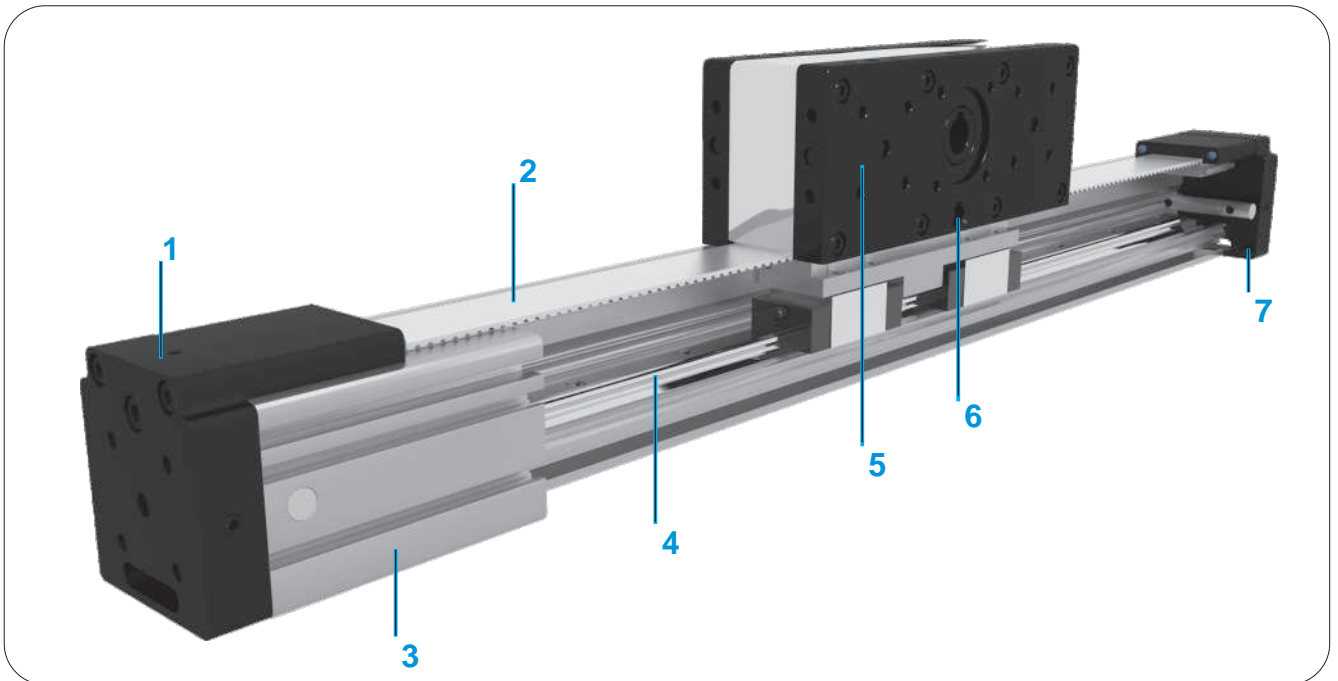
 Multi drive blocks, which travel independently of each other, can be applied.



 The aluminium profiles are manufactured according to the medium EN 12020-2 standard

Straightness = 0,35 mm/m; Max. torsion = 0,35 mm/m; Angular torsion = 0,2 mm/40 mm; Parallelism = 0,2 mm

STRUCTURAL DESIGN



- 1 - Tension End with integrated belt tensionin system
- 2 - AT polyurethane toothed belt with steel tension cords.
- 3 - Aluminium profile-Hard anodized
- 4 - Linear Ball Guideway
- 5 - Drive block with pulley, Motor flange; with built in Magnets
- 6 - Central lubrication port; both sides
- 7 - Tension End with integrated belt tensioning system

HOW TO ORDER

MTJZ - **65** - **1000** - **1** - **0** - **1**

Series :

MTJZ

Size :

40

65

80

110

Absolute Stroke (mm) :

(Absolute stroke = Effective stroke + 2 x Safety stroke)

Type of drive pulley :


0 : Pulley with through hole

1 : Pulley with journal

10 : Pulley with journal (without Keyway)

2 : Pulley with journal on both sides

20 : Pulley with journal on both sides (without Keyway)

 MTJZ 110 only available with drive pulley with through hole

Clamping element :

0 : Without

1 : With (available only for MTJZ 110)

Number of drive blocks :

The stated number specifies the number of drive blocks on one Linear unit

TECHNICAL DATA

General technical data for MTJZ series

Linear Unit	Drive block length Lv [mm]	Load capacity		Dynamic moment			Mass of drive block [kg]	Maximum Repeatability [mm]	* Maximum length ** (Version 1) Lmax [mm]	* Maximum length ** (Version 2) Lmax [mm]	Planar moment of inertia	
		Dynamic C [N]	Static C0 [N]	Mx [Nm]	My [Nm]	Mz [Nm]					ly [cm ⁴]	lz [cm ⁴]
MTJZ 40	120	4610	6930	28	120	120	0,95	± 0,08	1000	2000	9,8	11,6
MTJZ 65	200	13690	19500	130	710	710	3,2	± 0,08	1200	6000	59,8	73,8
MTJZ 80	250	29930	42360	400	2240	2240	4,9	± 0,08	1500	6000	129,4	173,5
MTJZ 110	300	43700	60400	680	3060	3060	11,3	± 0,08	1800	6000	513,0	620,0

*For lengths over the stated value in the table above please contact us.



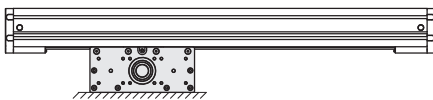
Recommended values of loads

All the data of static and dynamic moments and load capacities stated in the upper table are theoretical without considering any safety factor. The safety factor depends on the application and its requested safety. We recommend a minimum safety factor (fv =5.0)

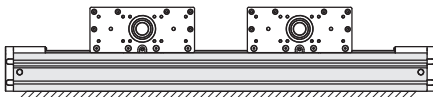
Modulus of elasticity: E = 70000 N / mm²

** Mounting versions

Version 1: Mounting by the drive block, profile travels

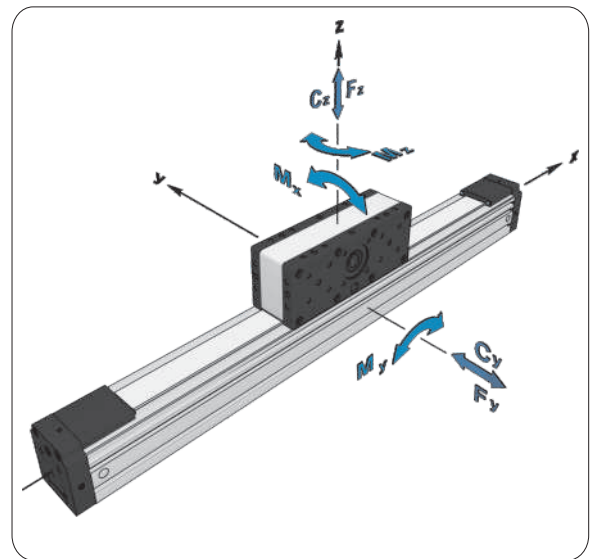


Version 2: Mounting by the profile, drive block travels



Multi drive blocks, which travel independently of each other, can be applied.

On request!



Drive and belt data

Linear Unit	Maximum travel speed [m / s]	Maximum drive torque [Nm]	Puley drive ratio [mm / rev]	Pulley diameter [mm]	Belt type	Belt width [mm]	Max. force transmitted by belt [N]	Specific spring constant Cspec [N]
MTJZ 40	5	3,6	99	31,51	AT3	20	230	225000
MTJZ 65	5	13,1	165	52,52	AT5	32	500	600000
MTJZ 80	5	29,4	210	66,84	AT5	50	880	960000
MTJZ 110	5	110,0	300	95,49	AT10	70	2300	2450000

Mass and mass moment of inertia

Linear Unit	Mass of linear unit [kg]	Mass moment of inertia of drive block [10 ⁻⁴ kg·m ²]
MTJZ 40	1,7 + 0,0023 * Stroke [mm]	2,3 + 0,0058 * Stroke [mm]
MTJZ 65	5,7 + 0,0054 * Stroke [mm]	18,9 + 0,0361 * Stroke [mm]
MTJZ 80	9,7 + 0,0083 * Stroke [mm]	60,5 + 0,0922 * Stroke [mm]
MTJZ 110	21,7 + 0,0147 * Stroke [mm]	273,0 + 0,3358 * Stroke [mm]



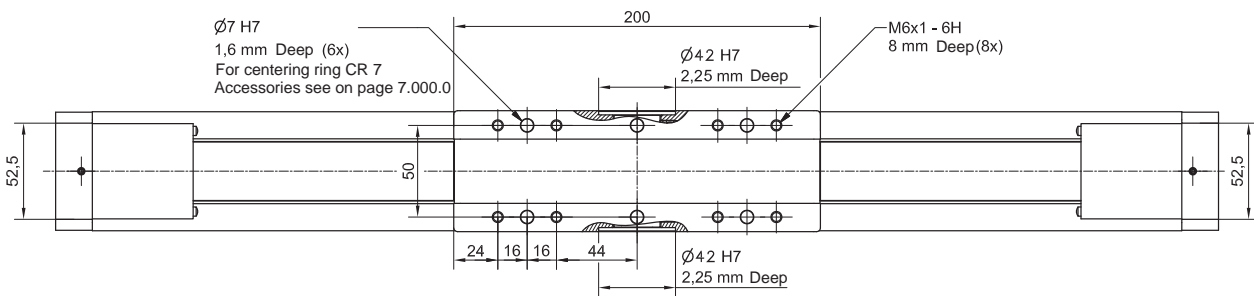
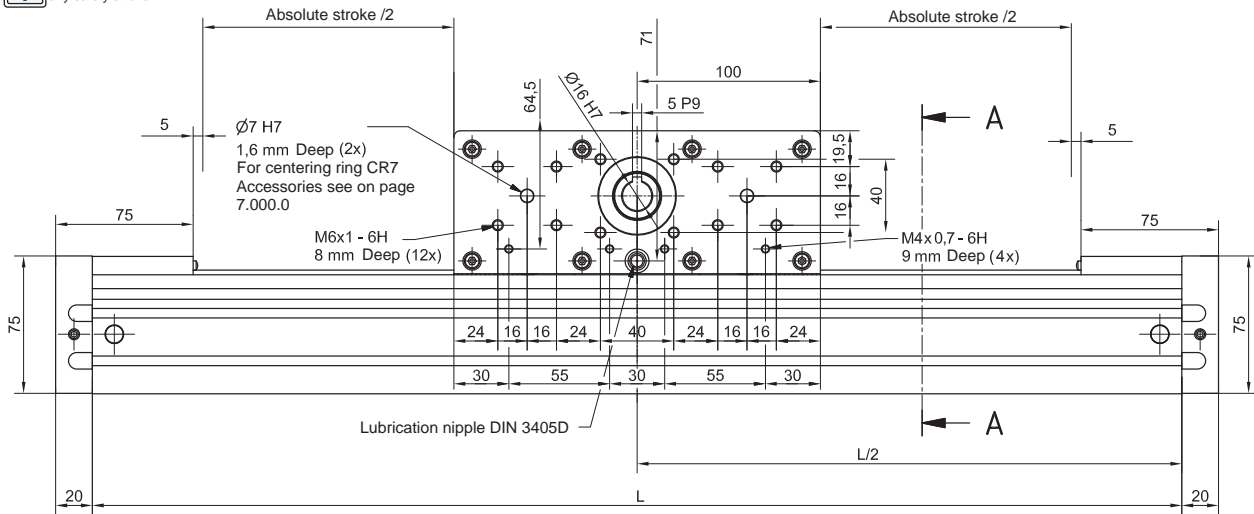
Mass calculation doesn't include mass of motor, reduction gear, switches and clamps.

DIMENSIONS



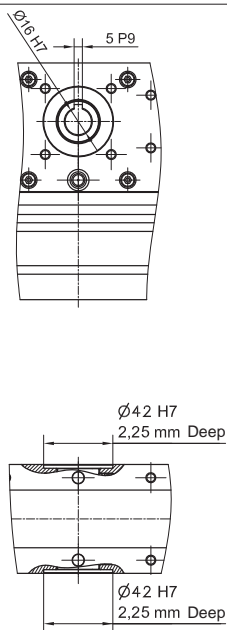
Linear Unit doesn't include any safety stroke.

Absolute stroke = Effective stroke + 2 x Safety stroke



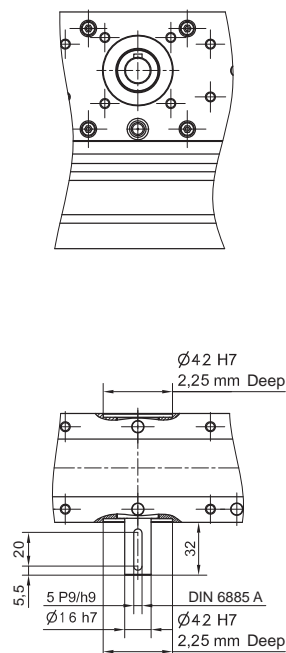
All dimensions in mm; Drawings scales are not equal.

TYPE 0



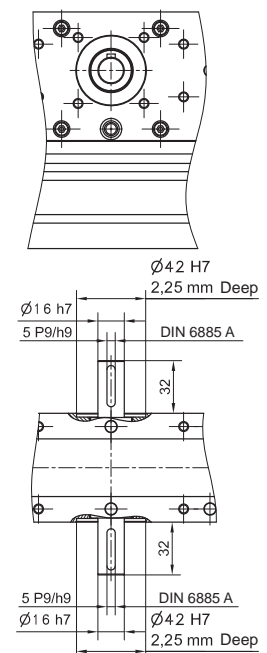
TYPE 1

Journal with or without Keyway.

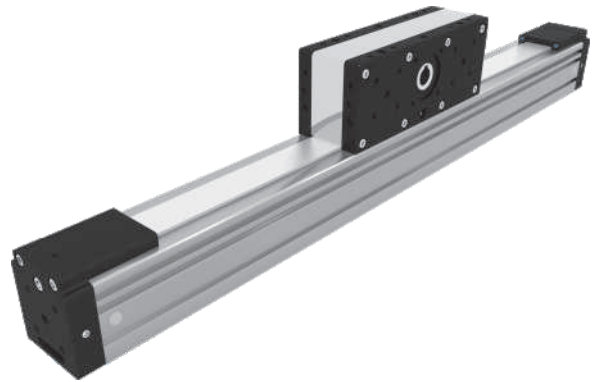
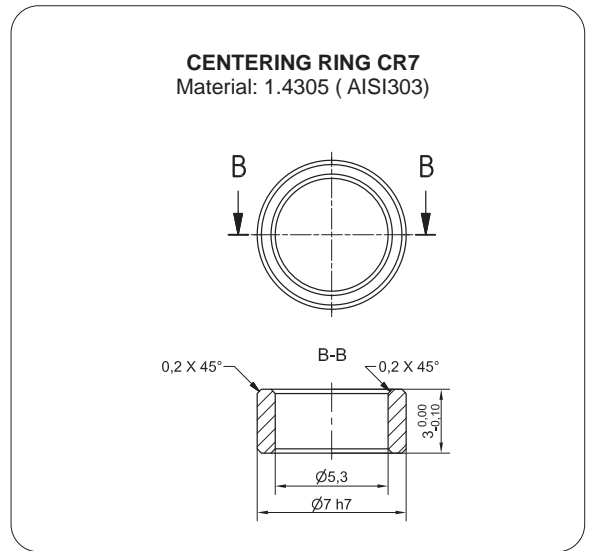
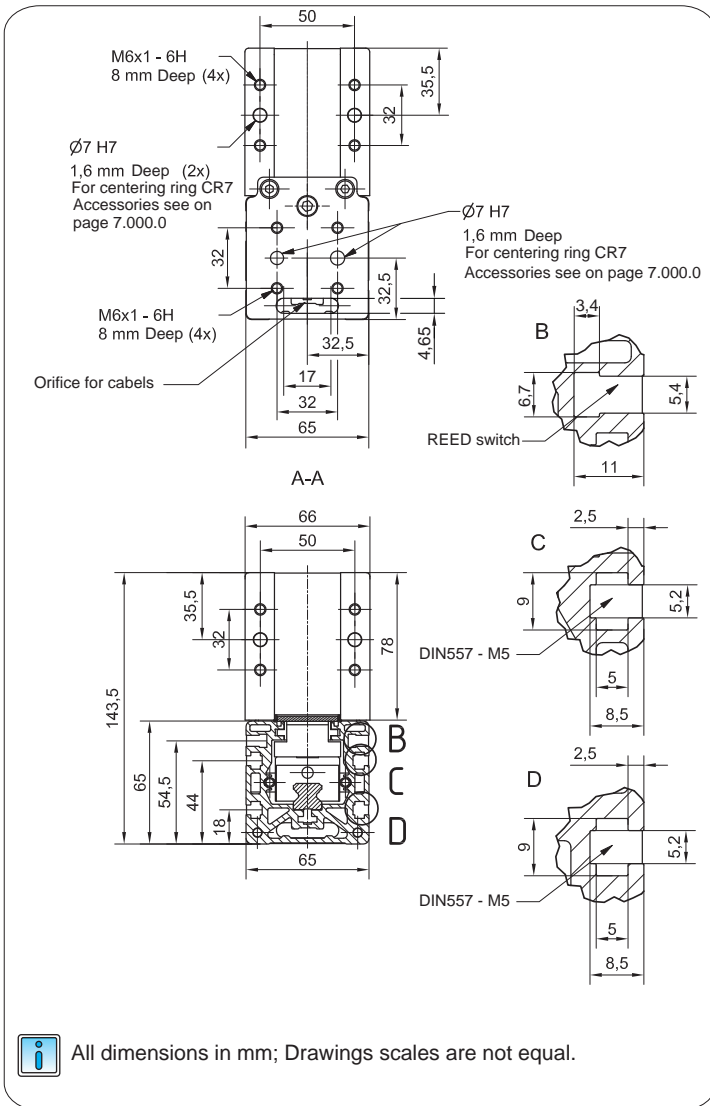


TYPE 2

Journal with or without Keyway.



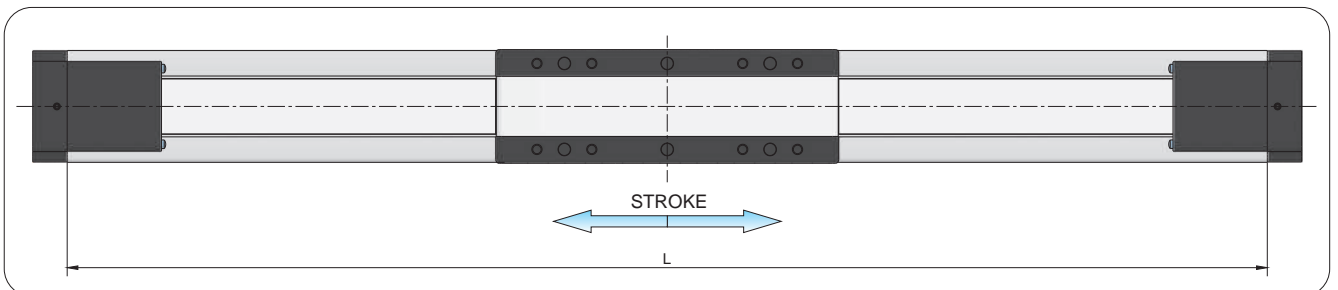
DIMENSIONS



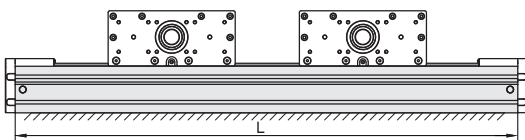
Defining of the linear module length

$$L = \text{Effective stroke} + 2 \times \text{Safety stroke} + 320 \text{ mm}$$

$$L_{\text{total}} = L + 40 \text{ mm}$$



Multi drive block



$$L = \text{Effective stroke} + 2 \times \text{Safety stroke} + 200 \times n_b + 120 \text{ mm}$$

n_b - number of drive blocks

$$L_{\text{total}} = L + 40 \text{ mm}$$

